TABLE 2.—*Free-air resultant winds (m. p. s.) during January, 1927*

Altitude (m.) m. s. l.	Broken Arrow, Okla. (233 meters)				Due West, S. C. (217 meters)				Ellendale, N. Dak. (444 meters)				Groesbeck, Tex. (141 meters)				Royal Center, Ind. (225 meters)				Washington, D. C. (34 meters)			
	Mean		9-yr. mean		Mean		6-yr. mean		Mean		10-yr. mean		Mean		9-yr. mean		Mean		9-yr. mean		Mean		7-yr. mean	
	Dir.	Vel.	Dir.	Vel.	Dir.	Vel.	Dir.	Vel.	Dir.	Vel.	Dir.	Vel.	Dir.	Vel.	Dir.	Vel.	Dir.	Vel.	Dir.	Vel.	Dir.	Vel.	Dir.	Vel.
Surface	S. 76°W.	0.8	S. 49°W.	1.1	N. 36°W.	1.2	N. 74°W.	1.1	S. 87°W.	3.7	N. 63°W.	2.9	S. 18°W.	3.4	N. 68°W.	0.5	S. 41°W.	1.3	S. 51°W.	1.9	N. 47°W.	2.1	N. 36°W.	1.7
250	S. 73°W.	0.9	S. 41°W.	1.2	N. 51°W.	1.1	N. 77°W.	1.3					S. 59°W.	1.8	N. 78°W.	0.6	S. 44°W.	1.7	S. 50°W.	2.3	N. 63°W.	3.6	N. 65°W.	3.3
500	S. 55°W.	2.2	S. 36°W.	2.4	N. 71°W.	2.4	W.	2.6	S. 88°W.	4.7	N. 68°W.	3.5	S. 52°W.	4.1	S. 59°W.	1.8	S. 51°W.	4.1	S. 60°W.	5.0	N. 63°W.	6.0	N. 71°W.	5.5
750	S. 63°W.	2.2	S. 41°W.	3.0	N. 73°W.	3.2	S. 84°W.	4.0	N. 79°W.	7.1	N. 67°W.	5.5	S. 56°W.	5.3	S. 61°W.	2.9	S. 65°W.	5.7	S. 66°W.	6.6	N. 62°W.	6.6	N. 71°W.	7.2
1,000	S. 72°W.	3.4	S. 58°W.	3.6	S. 80°W.	5.1	S. 81°W.	5.5	N. 73°W.	7.3	N. 63°W.	6.7	S. 60°W.	6.4	S. 64°W.	3.7	S. 76°W.	7.4	S. 75°W.	7.6	N. 57°W.	7.2	N. 69°W.	8.3
1,250	S. 75°W.	4.4	S. 71°W.	4.2	S. 76°W.	7.2	S. 87°W.	7.6	N. 69°W.	8.4	N. 63°W.	7.8	S. 62°W.	6.5	S. 70°W.	4.8	S. 86°W.	7.9	S. 80°W.	8.7				
1,500	N. 89°W.	5.4	S. 73°W.	5.4	S. 85°W.	8.2	S. 86°W.	9.9	N. 68°W.	9.4	N. 64°W.	8.2	S. 68°W.	6.3	S. 74°W.	5.8	N. 85°W.	9.7	S. 84°W.	9.9	N. 71°W.	7.8	N. 68°W.	10.1
2,000	S. 86°W.	7.1	S. 82°W.	7.3	S. 85°W.	10.3	S. 87°W.	12.5	N. 64°W.	11.1	N. 65°W.	10.8	S. 89°W.	6.1	S. 79°W.	7.2	N. 85°W.	11.0	S. 85°W.	11.6	N. 65°W.	8.9	N. 72°W.	11.5
2,500	N. 87°W.	9.0	S. 87°W.	8.8	W.	11.8	S. 89°W.	15.2	N. 63°W.	13.6	N. 66°W.	12.9	N. 59°W.	7.4	S. 81°W.	8.6	N. 86°W.	11.6	W.	13.2	N. 56°W.	9.6	N. 80°W.	13.9
3,000	S. 85°W.	11.6	N. 89°W.	10.2	S. 87°W.	14.8	S. 87°W.	16.6	N. 56°W.	15.5	N. 67°W.	14.4	N. 52°W.	9.1	S. 82°W.	10.1	N. 88°W.	15.3	S. 89°W.	13.9				
3,500	S. 88°W.	13.4	N. 86°W.	10.9	S. 77°W.	13.5	S. 84°W.	16.3	N. 76°W.	16.2	N. 68°W.	15.5	N. 33°W.	12.8	S. 84°W.	11.3	S. 87°W.	15.8	S. 83°W.	13.5				
4,000	S. 85°W.	11.0	N. 86°W.	11.3	S. 67°W.	18.0	S. 81°W.	16.2	N. 76°W.	19.2	N. 63°W.	17.0					S. 75°W.	19.1	S. 74°W.	17.4				
4,500									N. 45°W.	29.0	N. 56°W.	19.4					S. 76°W.	20.6	S. 76°W.	20.6				

WEATHER IN THE UNITED STATES

GENERAL CONDITIONS

The month was characterized by greater than the normal atmospheric pressure, the rapid movement of cyclonic systems eastward along the northern border, the rather sluggish movement elsewhere; moderate temperature for midwinter; generally deficient rainfall, except in the upper Ohio Valley and thence southwestward to Oklahoma, where it was normal or above. The snowfall was light to moderate in the middle Atlantic area, the immediate Ohio Valley, the middle Missouri Valley, and in the southwest.

CYCLONES AND ANTICYCLONES

By W. P. DAY

The month was marked by a succession of high-pressure areas of considerable magnitude and mostly of polar origin. Three of these had maximum pressures around 31 inches. On the morning of the 9th high pressure extended from Alaska to southern Mexico, with a crest of 30.92 inches at Miles City, Mont. Again, on the 14th a great HIGH extended from Canada to Central America, with a maximum pressure of 31.10 inches at Rapid City, S. Dak. Later, between the 25th and 28th, a large HIGH moved slowly southeast from the Canadian Northwest to the middle Atlantic States, with several pressure readings as high as 31.06 inches as it passed over the Lake region.

On account of the prevailing high pressure during much of the month, the number of low-pressure areas plotted was reduced to 16 as compared with 23 for December. There were no unusually severe storms.

THE WEATHER ELEMENTS

By P. C. DAY

PRESSURE AND WINDS

The outstanding features of the weather for the first month of 1927 were the unusually high sea-level barometric pressures, 31 inches or above, observed over the north-central districts on the 8th and over central and northeastern districts on the 26th and 27th, the pressure on the latter dates being the highest of record at many stations on the Great Lakes, in portions of the Ohio Valley, and to the eastward; the widespread excess of temparature; and the greatly deficient precipitation over most southern and eastern districts.

The first decade was mainly free from important cyclonic storms, though about the 6th a low-pressure area developed in the middle Plateau and moved northeastward, reaching North Dakota by the 8th, whence it moved southeastward to the Carolina coast by the morning of the 10th, where it again curved to the northeast and passed off the New England coast, reaching Newfoundland by the morning of the 12th. At no point in its long course did this storm reach extensive proportions or give any wide distribution of important precipitation.

At the beginning of the second decade a storm developed in the far Southwest and by the morning of the 13th it was central over Missouri attended by local heavy rains near the center and by snow to the westward and northward. During the following 24 hours the storm moved rapidly to the lower St. Lawrence Valley and widespread rain or snow, mostly light, occurred over nearly all districts from the Mississippi Valley eastward to near the Atlantic coast. Immediately following the passage of this storm, another developed off the coast of southern New England attended by precipitation, mostly sleet or snow, along the entire Atlantic coast from the Carolinas to Maine, some heavy falls of snow occurring in southeastern New York and near-by areas.

Cyclonic disturbances were rather frequent in the central valleys and Southwest during the latter part of the second decade and the first half of the third, during which time important precipitation, mostly rain, occurred over the middle and lower Mississippi Valley and portions of the Ohio Valley as well as lighter falls of both rain and snow in near-by areas; none of these low areas developed important proportions, however, and few persisted as well-defined storms over long courses.

The last half of the third decade had little cyclonic activity, though considerable precipitation occurred from central California northward on the 27th to 29th, and there were widespread, but light rains over the eastern third of the country during the last three days.

Anticyclones rather dominated the weather of the month and persisted to an unusual extent over the Plateau region during the first decade, extending into the districts to the eastward by the end. Early in the second decade an anticyclone of unusual strength moved into the upper Missouri Valley and advanced eastward into the Atlantic coast districts by the 17th, being quickly followed by another over the more northern districts, and rather high pressure persisted for several days over the north-central districts, advancing later to New England, attended by severe cold over the Great Plains